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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,707	03/11/2004	Alexander Reznik	I-2-0489.1US	6208
24374 7590 02/20/2008 VOLPE AND KOENIG, P.C. DEPT. ICC UNITED PLAZA, SUITE 1600 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103			EXAMINER MALEK, LEILA	
			ART UNIT 2611	PAPER NUMBER
			MAIL DATE 02/20/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/798,707

Applicant(s)

REZNIK ET AL.

Examiner

Leila Malek

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-14 and 16-19 is/are rejected.
- 7) ☒ Claim(s) 6 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>06/21/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement submitted on 06/21/2007 has been considered and made of record by the examiner.

Response to Arguments

2. Applicant's arguments filed on 08/09/2007 have been fully considered but they are not persuasive.

Applicant's Argument: Applicant argues, on pages 9-10, that Jeong fails to differentiate between multi-path signals based on the number of times that they have been detected.

Examiner's Response: Examiner asserts that Jeong discloses categorizing a plurality of multi-path signals in a Rake finger assignment database into a verified group (the states of "Assigned" and "Potential" have been interpreted as a verified group, because for multi-paths in "Assigned" and "Potential" states the SNR value must be higher than a threshold over N_ACCEPT consecutive times (i.e. interpreted as detection of a multi-path more than once)) (see Fig. 4 and column 5, lines 24-50) and an unverified group (i.e. the "Temporary" state) (see column 7, lines 24-40), wherein the verified group includes multi-path signals that were detected more than once and the unverified group includes multi-path signals that are not detected more than once. Therefore, based on the above citation Jeong clearly differentiates between multi-path signals based on the number of times that they have been detected.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4 and 10-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Jeong et al. (hereafter, referred as Jeong) (US 6,725,016).

As to claims 1 and 10, Jeong discloses a wireless communication method for assigning multi-paths to Rake receiver fingers (see the abstract, column 1, lines 8-12, and column 2, lines 42-47), the method comprising: (a) establishing a Rake finger assignment database (see the abstract and column 2, last paragraph); (b) categorizing a plurality of multi-path signals in the database into a verified group (the states of "Assigned" and "Potential" have been interpreted as a verified group, because for multi-paths in "Assigned" and "Potential" states the SNR value must be higher than a threshold over N_ACCEPT consecutive times (i.e. interpreted as detection of a multi-path more than once)) (see Fig. 4, column 5, lines 24-50, and column 7, lines 24-40) and an unverified group (i.e. the "Temporary" state), wherein the verified group includes multi-path signals that have been detected more than once and the unverified group

includes multi-path signals that have not been detected more than once; and (c) categorizing the multi-path signals in the verified group into an assigned subgroup (i.e. the "Assigned" state) and an unassigned subgroup (i.e. the "Potential" state), wherein each of the multi-path signals in the assigned subgroup is assigned to a Rake receiver finger and each of the multi-path signals in the unassigned subgroup is not assigned to a Rake receiver finger (see column 6, lines 16-22).

As to claims 2 and 11, Jeong further discloses (d) comparing the signal strength of each multi-path signal to a predetermined noise floor threshold; and (e) if the signal strength of the multi-path signal is less than the noise floor threshold, removing (rejecting) the multi-path signal from the database (See the abstract and column 5, lines 51-60).

As to claims 3 and 12, Jeong further discloses that if the removed multi-path signal is categorized in the assigned group, the Rake receiver finger is no longer assigned to the removed multi-path signal (see Fig. 4).

As to claims 4 and 13, Jeong further discloses (d) receiving a plurality of newly measured multi-path signals, during a measurement interval; (e) comparing each newly measured multi-path signal to the multi-path signals in the database to determine if each newly measured multi-path signal is found in the database; and (f) if a newly measured multi-path signal is not found in the database, adding the newly measured multi-path signal to the database (see the abstract and column 2, last paragraph).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 7-9, 14, 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong, in view of Rege et al. (hereafter, referred as Rege) (US 6,532,222).

As to claims 5 and 14, Jeong discloses all the limitations claimed in claims 5 and 14, except that each multi-path signal is assigned a respective bin in the database, the bin including a data structure including a verification flag data field, wherein step (f) further comprises setting the verification flag data field such that it indicates that the multi-path signal is not verified. Rege, in the same field of endeavor, discloses a finger assignment logic that confirms the presence and quality of a multi-path before assigning a parallel finger to that multi-path (See the abstract and column 1, first paragraph). Rege further discloses a pending-set database 110 (See column 6, last paragraph), which includes a plurality of entries that correspond to phases of active pilot signal at which multi-paths are believed to be present, wherein each entry includes a counter 206. Rege discloses that the counter is the number of power measurements for that phase that were below a power threshold. Rege also discloses that the entries include a state parameter 208, which is the number of power measurements for that phase that

were equal to a power threshold (i.e. interpreted as verification flag). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Jeong as suggested by Rege to enhance the signal-to-noise ratio of the combined demodulated paths in a rake receiver and as the result improve the quality of the wireless communication (see column 7, lines 32-61).

As to claims 7 and 16, Jeong discloses all the limitations claimed in claims 7 and 16, except that each multi-path signal is assigned a respective bin in the database, the bin including a data structure including a data field indicating the pilot phase of the multi-path signal. Rege, in the same field of endeavor, discloses a finger assignment logic that confirms the presence and quality of a multi-path before assigning a parallel finger to that multi-path (See the abstract and column 1, first paragraph). Rege further discloses a pending-set database 110 (See column 6, last paragraph), which includes a plurality of entries that correspond to phases of active pilot signal at which multi-paths are believed to be present. It would have been obvious to one of ordinary skill in the art at the time of invention to modify Jeong as suggested by Rege to enhance the signal-to-noise ratio of the combined demodulated paths in a rake receiver and as the result improve the quality of the wireless communication (see column 7, lines 32-61).

As to claims 8 and 17, Jeong discloses all the limitations claimed in claims 8 and 17, except that each multi-path signal is assigned a respective bin in the database, the bin including a data structure including a data field indicating the averaged signal strength of the multi-path signal. Rege, in the same field of endeavor, discloses a finger assignment logic that confirms the presence and quality of a multi-path before assigning

a parallel finger to that multi-path (See the abstract and column 1, first paragraph). Rege further discloses a pending-set database 110 (See column 6, last paragraph), which includes a plurality of entries that correspond to phases of active pilot signal at which multi-paths are believed to be present, wherein each entry includes a power parameter 204. Rege discloses that the power parameter is the averaged normalized power measured at that phase (See column 9, last paragraph). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Jeong as suggested by Rege to enhance the signal-to-noise ratio of the combined demodulated paths in a rake receiver and as the result improve the quality of the wireless communication (see column 7, lines 32-61).

As to claims 9 and 18, Jeong discloses all the limitations claimed in claims 9 and 18, except that each multi-path signal is assigned a respective bin in the database, the bin including a data structure including a data field identifying an assigned Rake receiver finger. Rege, in the same field of endeavor, discloses a finger assignment logic that confirms the presence and quality of a multi-path before assigning a parallel finger to that multi-path (See the abstract and column 1, first paragraph). Rege further discloses a pending-set database 110 (See column 6, last paragraph), which includes a plurality of entries that correspond to phases of active pilot signal at which multi-paths are believed to be present, wherein each entry includes a pointer 210. Rege discloses that the pointer 210 indicates which, if any, demodulator 102 (finger) is assigned to the phase corresponding to that entry. It would have been obvious to one of ordinary skill in the art at the time of invention to modify Jeong as suggested by Rege to enhance the

signal-to-noise ratio of the combined demodulated paths in a rake receiver and as the result improve the quality of the wireless communication (see column 7, lines 32-61).

As to claim 19, Rege further discloses a finger assignment logic that confirms the presence and quality of a multi-path before assigning a parallel finger to that multi-path (see the abstract and column 1, first paragraph). Rege further discloses that the system is a timeslot-based system and the measurement interval occurs on a frame-by-frame basis (see column 11, lines 21-26). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Jeong as suggested by Rege to enhance the signal-to-noise ratio of the combined demodulated paths in a rake receiver and as the result improve the quality of the wireless communication (see column 7, lines 32-61 and column 12, lines 8-21).

Allowable Subject Matter

5. Claims 6 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claim 20 is allowed. The following is a statement of reasons for the indication of allowable subject matter:

As to claim 20, a comprehensive search of prior art of record failed to disclose, either alone or in combination, an apparatus comprising: (a) a processor which includes a path search scheduler for receiving signals from higher layers and generating scheduling data; and (b) a memory device in communication with the processor, wherein the memory device has a first portion for receiving the scheduling data and

storing the results of a pilot path search process performed by the path search scheduler, and a second portion for storing the results of a pilot strength measurement (PSM) process running on the processor, wherein the processor implements a path position detection process and a finger assignment process for providing an assignment to a Rake finger pool, the path position detection process searching for all multi-paths for a plurality of wireless transmit/receive units (WTRUs) in a round-robin search order; and (c) a path search vector correlator (VC) grid for receiving data from the first portion of the memory device and providing an output which is evaluated by the PSM process to generate evaluation results which are stored in the second portion of the memory device for access by the path position detection process.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leila Malek whose telephone number is 571-272-8731.

The examiner can normally be reached on 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Leila Malek
Examiner
Art Unit 2611

L.M.


MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER